



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/902,494	07/10/2001	Peter M. Wild	3048.1000-002	5907

21005 7590 12/10/2003

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.
530 VIRGINIA ROAD
P.O. BOX 9133
CONCORD, MA 01742-9133

EXAMINER

NGUYEN, SON T

ART UNIT

PAPER NUMBER

3643

DATE MAILED: 12/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/902,494	VILD ET AL. <i>P</i>
Examiner	Art Unit	
	Son T. Nguyen	3643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 22 August 2003.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-40 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-40 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Son T. Nguyen
 Primary Exam 3643
 12/7/03

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 10 July 2001 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
 13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 a) The translation of the foreign language provisional application has been received.
 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) Notice of References Cited (PTO-892) 4) Interview Summary (PTO-413) Paper No(s). _____.
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) Notice of Informal Patent Application (PTO-152)
 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. 6) Other: _____

DETAILED ACTION***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1-18,21-35,37-39** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibata (JP406169643A) in view of Schoonman (US 3,295,254).

For claims 1 & 2, Shibata discloses a method for injecting a fluid into a woody plant such as a tree, the method comprising the steps of providing a fluid reservoir 20 containing a fluid L, a gas reservoir 2 containing a gas G, a needle H,28 having a proximal end and a distal end, an inner conduit 28, a tip (fig. 2 near ref. H), an outer surface, at least one aperture connecting the inner conduit and the outer surface (fig. 2, near ref. H so that liquid from the needle can flow to the tree), a hand-held injector 10,13 (in order for the injector to be connected with the reservoir, a user must hand held the injector and screw it onto the reservoir, thus, the injector is a hand held injector) connectable to the fluid reservoir 20 and the gas reservoir 2, wherein the injector can direct at least a portion of the fluid L from the fluid reservoir 20 with at least one piston 13 actuated by at least a portion of the gas G from the gas reservoir 2 without the gas mixing with the fluid (the gas from the gas reservoir 2 is injected into the fluid container 20 and then that gas provide pressure to "push" the fluid L from the container 20 into passageway 25 and into the pipe 23), through the inner conduit and out of the at least one aperture; inserting the needle into the woody plant as shown in fig. 2; injecting, via the injector, at least a portion of the fluid L from the fluid reservoir 20 using at least a portion of the gas G from the gas reservoir 2, through the inner conduit 28 of the needle and out of the at least one aperture (near ref. H) and into the woody plant, thereby injecting the fluid into the woody plant (see abstract and figures). Note, Shibata does not disclose that the gas injected from the gas container travels with the liquid through

pipe 23 to be injected into the tree. Instead, he teaches that the pressurized gas is injected into the container 20 and thus pushing the fluid L into passageway 25 and into the pipe 23. In addition, if gas did travel through passageway 25, it would have been trapped in drip area 27 so will not mix with the fluid when injected into the tree. However, it is uncertain if the needle's tip of Shibata is sealed and terminating in a point at the distal end. Schoonman teaches an apparatus for injecting liquids into trees in which he employs a needle 11 having a proximal end (fig. 3, end near refs. 21,17) and a distal end (fig. 3, end near ref. 12), an inner conduit 14, a sealed tip 12 terminating in a point at the distal end, an outer surface and at least one aperture 16 connecting the inner conduit and the outer surface and proximate to the point at the distal end. It would have been an obvious substitution of functional equivalent to substitute the needle of Shibata with the needle with the above described features of Schoonman, since it would perform the same function; i.e. to penetrate a tree so as to inject liquid into the tree.

For claim 3, Shibata as modified by Schoonman is silent about the plant being a palm tree or a shrub. It would have been an obvious matter of choice to one having ordinary skill in the art at the time the invention was made to employ the method of injecting a fluid of Shibata as modified by Schoonman on a palm tree or a shrub, depending on a user's preference to do so if happens that the palm tree or shrub needs to be treated.

For claim 4, Shibata as modified by Schoonman is silent about the method being repeated one or more times on the same woody plant. It would have been obvious to one having ordinary skill in the art at the time the invention was made to repeat the method of Shibata as modified by Schoonman on the same tree, depending on how bad the plant is in need of medicament, nutrients, fertilizer, pesticide, etc.

For claims 5-7, Shibata is silent about the fluid L is a treatment for a disease condition. In addition to the above, Schoonman further discloses the fluid used in his injection method is to treat the tree for a disease and/or provide the tree with nutrients or water (col. 1, lines 12-14 and col. 4, line 60). It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a fluid which will treat a tree for a disease condition, insect infestation, or nutrients as taught by

Shoonman in the method of injecting of Shibata in order to treat the tree for disease and to provide the tree with proper nutrients and water.

For claim 8, Shibata as modified by Schoonman (emphasis on Schoonman) further discloses the fluid is a suspension of chemicals in water (col. 3, lines 40-43).

For claim 9, Shibata as modified by Schoonman further discloses the needle is inserted into expansion tissue which is the layer of tissue beneath the bark.

For claim 10, Shibata as modified by Schoonman (emphasis on Schoonman) further discloses the needle includes two apertures 16.

For claim 11, Shibata as modified by Schoonman (emphasis on Schoonman) further disclose the at least one aperture 16 is at a forward angle such as 90° relative to the longitudinal axis of the needle (see fig. 3 of Schoonman).

For claim 12, Shibata as modified by Schoonman (emphasis on Schoonman) further disclose the angle of 90° which is about 50° to about 130° relative to the longitudinal axis of the needle.

For claim 13, Shibata as modified by Schoonman (emphasis on Schoonman) further disclose the angle of 90° which is about 60° to about 120° relative to the longitudinal axis of the needle.

For claim 14, Shibata as modified by Schoonman (emphasis on Schoonman) shows an angle of 90° but not an angle of about 65°. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the apertures of Shibata as modified by Schoonman angled at about 65°, since it has been held that where routine testing and general experimental conditions are present, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

For claim 15, Shibata as modified by Schoonman (emphasis on Schoonman) further disclose at least a portion of the outer surface of the needle between the point 12 and the at least one aperture 16 includes a taper (see fig. 3, the aperture 16 in consideration is the one near refs. 12,14).

For claim 16, Shibata as modified by Schoonman (emphasis on Schoonman) further disclose the needle has a first portion from the proximal end to a shoulder point (fig. 3, shoulder point stops near refs. 16,14,12), wherein the outer surface of the first portion has a first taper (fig. 3, first taper occurs from proximal end where refs. 21,17 are located to the shoulder point), and a second portion from the shoulder point to the distal end (fig. 3, near ref. 12), wherein the second portion has a second taper (from shoulder point to the tip of the needle) which is substantially greater than the first taper.

For claim 17, the second taper of Shibata as modified by Schoonman (emphasis on Schoonman) appears to be in the range of about 10 degrees to about 50 degrees relative to the longitudinal axis of the needle; however, this is not certain. In any event, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the taper angle of Shibata as modified by Schoonman about 10° to about 50°, since it has been held that where routine testing and general experimental conditions are present, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

For claim 18, Shibata discloses a method for injecting a liquid into a plant such as a tree comprising the steps of providing the liquid for the plant; providing a compressed gas G for injecting the liquid into the plant; and with a hand-held injector (in order for the injector to be connected with the reservoir, a user must hand held the injector and screw it onto the reservoir, thus, the injector is a hand held injector), injecting, by motion of at least one piston 13 actuated by at least a portion of the compressed gas without the gas mixing with the liquid (the gas from the gas reservoir 2 is injected into the fluid container 20 and then that gas provide pressure to "push" the fluid L from the container 20 into passageway 25 and into the pipe 23), the liquid through a needle H,28 fixed relative to the injector through a surface of the plant to inject the liquid into the plant. However, Shibata is silent about the liquid being a medicament. Schoonman teaches a method for injecting a medicament into a plant to treat the plant for disease (col. 1, lines 14 & col. 3, lines 40-42). It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a medicament as taught by Schoonman as the preferred liquid in the method of

Art Unit: 3643

Shibata in order to treat the tree for disease. Note, Shibata does not disclose that the gas injected from the gas container travels with the liquid through pipe 23 to be injected into the tree. Instead, he teaches that the pressurized gas is injected into the container 20 and thus pushing the fluid L into passageway 25 and into the pipe 23. In addition, if gas did travel through passageway 25, it would have been trapped in drip area 27 so will not mix with the fluid when injected into the tree.

For claims 21 & 22, Shibata discloses an apparatus for injecting a fluid into a woody plant such as a tree, the apparatus comprising a fluid reservoir 20 containing a fluid L, a gas reservoir 2 containing a gas G, a needle H,28 having a proximal end and a distal end, an inner conduit 28, a tip (fig. 2 near ref. H), an outer surface, at least one aperture connecting the inner conduit and the outer surface (fig. 2, near ref. H so that liquid from the needle can flow to the tree), a hand-held injector 10,13 (in order for the injector to be connected with the reservoir, a user must hand held the injector and screw it onto the reservoir, thus, the injector is a hand held injector) connectable to the fluid reservoir 20 and the gas reservoir 2, wherein the injector can direct at least a portion of the fluid L from the fluid reservoir 20 with at least one piston 13 actuated by at least a portion of the gas G from the gas reservoir 2 without the gas mixing with fluid (the gas from the gas reservoir 2 is injected into the fluid container 20 and then that gas provide pressure to "push" the fluid L from the container 20 into passageway 25 and into the pipe 23), through the inner conduit and out of the at least one aperture to inject the fluid into the woody plant. However, it is uncertain if the needle's tip of Shibata is sealed and terminating in a point at the distal end. Schoonman teaches an apparatus for injecting liquids into trees in which he employs a needle 11 having a proximal end (fig. 3, end near refs. 21,17) and a distal end (fig. 3, end near ref. 12), an inner conduit 14, a sealed tip 12 terminating in a point at the distal end, an outer surface and at least one aperture 16 connecting the inner conduit and the outer surface and proximate to the point at the distal end. It would have been an obvious substitution of functional equivalent to substitute the needle of Shibata with the needle with the above described features of Schoonman, since it would perform the same function; i.e. to penetrate a tree so as to inject liquid into the tree. Note, Shibata does not disclose that the gas injected from the

Art Unit: 3643

gas container travels with the liquid through pipe 23 to be injected into the tree. Instead, he teaches that the pressurized gas is injected into the container 20 and thus pushing the fluid L into passageway 25 and into the pipe 23. In addition, if gas did travel through passageway 25, it would have been trapped in drip area 27 so will not mix with the fluid when injected into the tree.

For claims 23,38, see claim 3 above.

For claim 24, see claim 5 above.

For claim 25, see claim 6 above.

For claim 26, see claim 7 above.

For claim 27, see claim 8 above.

For claim 28, see claim 10 above.

For claim 29, see claim 11 above.

For claim 30, see claim 12 above.

For claim 31, see claim 16 above.

For claim 32, see claim 17 above.

For claim 33, Shibata as modified by Schoonman (emphasis on Schoonman) further discloses the at least one aperture 16 is located between the shoulder point and the proximal end.

For claim 34, Shibata as modified by Schoonman discloses a method for injecting a fluid into a woody plant using the apparatus as described above to perform the steps of providing the apparatus as described; inserting the needle of the apparatus as described into the woody plant; and injecting the fluid into the plant.

For claims 35 & 39, Shibata as modified by Schoonman discloses medicament, which some medicament are made out of some sort of herbal product. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use herbal product in the fluid of Shibata as modified by Schoonman, depending on the type of tree requirement for certain type of medicament such as herbal product.

3. **Claims 19,36,40** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibata as modified by Schoonman as applied to claim 18 above, and further in view of Hendrixson et al. (US 4,103,456). Shibata as modified by Schoonman is silent about the

medicament being selected from a fertilizer, a pesticide, a fungicide, a growth regulator and a hormone. Hendrixson et al. teach a method for treating trees in which they inject medicament such as fertilizer, growth regulator, hormone, etc. into the trees to treat the trees for disease (col. 4, lines 63-65). It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a medicament such as fertilizer, growth regulator, hormone as taught by Hendrixson et al. in the method of Shibata as modified by Schoonman in order to treat the tree for disease.

4. **Claim 20** is rejected under 35 U.S.C. 103(a) as being unpatentable over Shibata as modified by Schoonman as applied to claim 18 above, and further in view of Mazur et al. (US 4,908,983). Shibata as modified by Schoonman is silent about the gas being selected from the group consisting of carbon dioxide, air, nitrogen. Mazur et al. teach a tree injector in which they employ carbon dioxide (col. 3, line 20) to provide a pressure source so as to inject fluid into the tree. It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ carbon dioxide as taught by Mazur et al. as the preferred gas in the method of Shibata as modified by Schoonman in order to provide a pressure source so as to inject fluid into the tree.

Response to Arguments

5. Applicants' arguments filed 8/22/03 have been fully considered but they are not persuasive.

Applicants argued that Shibata and Schoonman, taken individually or in combination, do not teach the added limitation of without the gas mixing with the fluid, and Schoonman merely discloses a gravity fed device and not compressed gas. As explained in the above, Shibata's gas does not mix with the fluid being injected into the tree because the gas is injected into the container 20 and there, it pushes the fluid down into passageway 25 into the liquid dripping/holding area 27 and then into the pipe 23 to be injected into the tree. No where in Shibata states that the gas is to travel with the fluid into the tree. In addition, it would not make sense to do so because then, the tree would not get full dosage of the fluid because there are air trapped in the fluid. Furthermore, if the gas did travel with the fluid down into the passageway 25, the gas would stay in dripping/holding area 27 and only the liquid would travel through pipe 23

Art Unit: 3643

because that is how the device works. Shibata's pressurized or compressed gas is a strong force when coming out of the valve mechanism 10 into the container 20, therefore, the gas will be pushed to the top of the container as in a boiling bubble effect and not trapped in the fluid to travel through the passageway and pipe to the tree. Why would Shibata want to inject gas or air into the tree when the idea is to inject fluid into the tree.

As for Schoonman, clearly from col. 1, lines 58-60 and col. 2, line 18, Schoonman discloses a source of fluid pressure; therefore, how can it be only gravity fed because in order to be gravity fed, there is no extra pressure assisted and only gravity is provided for the injection of fluid into the tree. In addition, evidence from fig. 3 that Schoonman's device is not gravity fed can be seen by both the needle and the source of pressurized gas 34 laying horizontally with the tree so gravity cannot work when the device at the same horizontal plane as the surface being injected.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Son T. Nguyen whose telephone number is (703) 305-0765. The examiner can normally be reached on Monday - Friday from 9:00 a.m. to 5:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Poon, can be reached at (703) 308-2574. Any inquiry of a general nature or relating to the status of this application or proceeding should be

Art Unit: 3643

directed to Customer Service at (703) 872-9325. The official fax number is 703-872-9306.



Son T. Nguyen

Primary Examiner, GAU 3643

December 7, 2003